I/WE CLAIM:

1. A method of engine starting in a gas turbine engine comprising:

rotating the engine to provide an air flow into a combustor of the engine;

injecting fuel into the combustor at a varying rate until the engine is lighted-off, the varying rate being a function of time and represented by a curve having at least one high frequency with respect to a light-off time, representing instant changes of the rate for intersecting a light-off zone while reducing a quantity of fuel injected into the combustor; and then,

continuously injecting fuel into the combustor to accelerate the engine to a self-sustaining operation condition.

2. A method as claimed in claim 1 wherein the curve comprises a low frequency with respect to the light-off time, representing a change trend of the varying rate.

3. A method as claimed in claim 2 wherein the curve has an increasing trend and comprises an oscillatory profile.

4. A method as claimed in claim 2 wherein the curve has an increasing trend and comprises a series of spikes.

5. A method as claimed in claim 2 wherein the curve has an increasing trend and comprises a squared-off wave profile.

6. A method as claimed in claim 2 wherein the curve has an increasing trend and comprises a step profile.

7. A method as claimed in claim 2 wherein the engine is rotated at a varying speed as a function of time.

8. A method as claimed in claim 6 wherein the engine is rotated at an increasing speed.

9. A method as claimed in claim 2 further comprising introduction of a predetermined first fuel flow level into the combustor prior to fuel injection at the varying rate.

10. A method as claimed in claim 9 further comprising: selecting a minimum engine speed to begin the introduction of the predetermined first fuel flow level for stating the engine under a variety of altitude and temperature conditions.

11. A method as claimed in claim 10 further comprising:

sensing a temperature of the fuel to be injected into the combustor;

sensing a temperature of the air flow to be provided into the combustor;

sensing a forward flight velocity ram quantity;

sensing an ambient air pressure;

sensing the varying speed of the engine; and

processing the sensed data to determine the minimum engine speed for the introduction of the predetermined first fuel flow level.

12. A method as claimed in claim 2 further comprising: sensing a temperature of an exhaust gas flow to determine if the light-off occurs.

13. A method as claimed in claim 2 further comprising: biasing a profile of the curve representing the varying fuel injection rate according to changes in the altitude and temperature conditions.

14. A method as claimed in claim 2 further comprising: changing the predetermined first fuel flow level according to changes in the altitude and temperature conditions.

15. A method as claimed in claim 11 further comprising:

measuring a light-off time taken from the beginning of the introduction of the predetermined first fuel flow level, to the occurrence of the light-off; and

storing the measured light-off time and the sensed data in a database for reference in a future engine starting process when a search shows no data associated with an altitude and temperature condition, similar to a current altitude and

temperature condition generated in a previous light-off process and stored in the database.

16. A method as claimed in claim 15 further comprising:

changing a criterion of the minimum engine speed and the predetermined first fuel flow level to reduce the light-off time according to the stored data associated with the similar altitude and temperature condition, when such data is located in the database; and

storing data regarding the changes and the light-off time currently measured, and deleting the previously stored data of the minimum engine speed and the predetermined first fuel flow level and the previously stored light-off time associated with the similar altitude and temperature condition, when the current light-off time is shorter than the previously stored light-off time.